

GOLOVIN, I. V.

JPRS 60851
29 NOVEMBER 1973

ACCELERATION OF IONS BY A RELATIVISTIC ELECTRON BEAM

UDC 531.9.07

/Article by A. A. Plyuto, K. V. Soladze, S. M. Temchin, G. P. Kholodov, Ye. D. Kozlov, B. A. Tokhuyev and I. V. Golovini, Moscow, Zhurnal Tekhnicheskoy Fiziki, Kholmensk, Vol. 43, No. 8, 1973. Signed to press 22 June 1972. PP. 1627-1631/

Abstract

The effect of ion acceleration by a relativistic electron beam was investigated. Protons were accelerated to 6 - 7 million electron volts for an energy of an electron beam of approximately one million electron volts. The beam composition and its energy distribution were studied. It was demonstrated that the energy of protons accelerated by electrons rises more rapidly than linearly with an increase in the accelerating voltage in the 0.1 - 1 million electron volts range.

The effect of ion acceleration in an electron beam was observed initially when obtaining nonrelativistic electron beams from a plasma emitter //1/. Protons and ions of carbon with maximum energies of 4 - 5 and 10 - 20 MeV were recorded in the following experiments for an average of 200 - 300 keV electron energy [2]. A linear rise in the energy of ions with an increase in the energy of electrons was observed in the range of 10 - 200 kV. This accelerating voltage under optimal conditions for ion acceleration. This opened up the possibility for creating an electron jet ion accelerator at 10 - 100 MeV using 1 - 2 MeV relativistic electron beams. Some investigations in this direction were conducted using high current electron resonator accelerators.

Arrangement of Experiment

Ion acceleration by means of electrons was done by using a variable accelerating voltage oscillating with a frequency of 0.3 megahertz and an initial amplitude of 0.2 - 1 megavolts applied to the accelerating gap. The high

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[1 - USSR - L]

Mechanical

USSR

UDC: 621.378.002.54

SAMOYLOV, A. D., ~~GOLOVIN, N. V.~~, ZHEZLOV, V. V., BELIKOV, S. S.

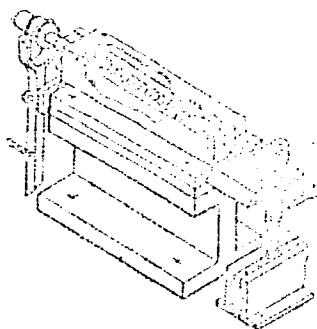
"A Semiautomatic Device for Applying a Coating"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratoy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329600, Division H, filed 26 Nov 69, published 9 Feb 72, p 209

Translation: This Author's Certificate introduces a semiautomatic device for applying a coating on the junctions of transistor devices. The device contains a cassette-loading mechanism, a cassette-transport mechanism, and a mechanism for applying a protective coating. As a distinguishing feature of the patent, the quality of the coating is improved by making the mechanism for coating application in the form of two gears which mesh with drive racks. Fastened to the gear axles are spring clamps carrying wire loops.

USSR

SAMOYLOV, A. D. et al., USSR Author's Certificate No 389600



2/2

USSR

UDC 621.396.626

G
GOLOVIN, O. V.

"Immunity of a Frequency Telegraphy Receiver with Limiter to Fluctuating Noise"

Moscow, Radiotekhnika, Vol 25, No 8, Aug 70, pp 10-17

Abstract: The paper considers the effect of amplitude limiting on the error probability in frequency telegraphy reception in fluctuating noise. This is a departure from the usual treatment of the subject in earlier papers, where the error probability is determined for an ideal receiver without taking into account its actual stages, the limiter in particular. In this analysis, the limiter whose effect is considered is assumed ideal. Assuming that the signal at the limiter input fades according to the Rayleigh law and that its initial phase is uniformly distributed in the interval from 0 to 2π , the author determines the voltage energy spectrum at the limiter output for a narrow-band noise signal whose spectrum is symmetrical around the center frequency of the radio-frequency circuit. The frequency of the fading signal is, in general, unequal to the noise center frequency. The author concludes that the presence of a limiter raises the error probability to some extent. In concluding, he expresses his gratitude to V. M. Sidorov for his valuable advice on writing the article

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USSR

UDC: 621.396.62

GOLOVIN, O. V.

"Experimental Determination of the Density Function for Erroneous Recording of a Frequency Telegraphy Radio Receiver in the Presence of Fluctuation Interference"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., pp 57-61 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D8)

Translation: An investigation was made into the effect which the individual elements of a receiver (frequency telegraphy) have on interference stability with various types of data transmission. The interference from a noise generator and a signal were sent through an adder to the input of a long-range radio receiver on a tuning frequency of 5.8 MHz. The signal was frequency keyed either by "points" or by "code" at a rate of 188 bauds. The results of the study showed that the use of a keying filter considerably improves interference stability. Interference stability is the same for reception by the methods of "gating" and "integrating" with a narrow-band keying filter. Bibliography of three titles. N. S.

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USSR

UDC: 621.396.626

GOLOVIN, O. V.

"Effect of a Limiter on Double-Frequency Telegraphy Noise-Immune Reception in Fluctuating Noise"

Moscow, Radiotekhnika, Vol. 25, No. 11, 1970, pp 62-67

Abstract: The purpose of this paper is to fill in the gap in the literature on double-frequency telegraphy regarding the effect of limiters on signal reception in noise. Determining the error probability in this type of reception, the author takes into account the difference in voltage dispersion at the output of idle channels, which is especially marked when the frequency characteristic of the receiver r-f strip is not rectangular. As given, the block diagram of the receiver shows the antenna feeding into the r-f strip, then to the limiter, which in turn feeds four filters in parallel. Each filter feeds into paired detector diodes, and four of these latter feed one of the two frequency channels. In the analysis, the frequency characteristic of the r-f strip is assumed bell-shaped and the filter characteristics are assumed rectangular with identical pass bands. It is assumed also that the input signal fades according to the Rayleigh law and that its initial phase is uniformly distributed in the 0-2 π interval, when the sum of signal and noise is normally distributed.

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USSR

UDC 624.07:534.1

KRISHTAL, M. A., GOLOVIN, S. A., ARKHIPOV, I. K., ROSTOVTSEV, N. M.,
GORDON, V. A.

"Determining Measures for Energy Scattering in the Excitation of Transverse
Resonance Vibrations"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering
Under Oscillations of Mechanical Systems -- Collection of Works), Kiev,
"Nauk. dumka", 1972, pp 191-195 (From RZh-Mekhanika, No 3, Mar 73,
Abstract No 3V269)

Translation: Semiempirical relationships are presented which make it possible
to determine on the basis of amplitude-time curves obtained from vibrograms
under the excitation of transverse resonance oscillations of the sample the
decrements in vibrations for a given material (for different stresses) without
specifying the mechanism for internal energy scattering. It is shown from the
processing of results for three samples (copper, nickel, titanium) that the
calculated decrements in vibrations under excitation of oscillations are con-
siderably different from decrements obtained experimentally in studying
damping of vibrations. Yu. G. Balakirev.

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USSR

UDC 539.67

KRISHTAL, M. A., VYBOYSHCHIK, M. A., VODOP'YANOV, V. N., GOLOVIN, S. A.,
MOKROV, A. P., and GONCHARENKO, I. A.

"Dislocation Damping and Study of Dislocation Structure and Mobility Along the Dislocation Tubes"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 85-90

Abstract: The effect of weakly soluble impurities and their mobility on stress in surface layers and upon formation of a dislocation network before the diffusion front is studied. The change in dislocation structure is investigated by internal friction time dependence. At the same time, the additional impurities precipitation upon dislocations was considered in the recovery process of Cu-La, Cu-Li, and Cu-B alloys. An increased dislocation density in the diffusion zone was studied on an Fe-In system. Diffusion equations for impurity atoms along the dislocation, its solution, and analysis are presented. The described model works in dilute solutions with impurity concentrations less than 0.05% and at temperatures lower than those corresponding to the formation of Cottrell's atmospheres. 1 table. 5 figures, 3 references.

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1/2 040 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INTERNAL FRICTION IN TWO PHASE ALLOYS OF IRON WITH BORON AND IRON
DIBORIDE -U-
AUTHOR-(03)-KRISHTAL, M.A., GOLOVIN, S.A., SVOBODOV, A.N.
COUNTRY OF INFO--USSR
SOURCE--FIZ. METAL METALLOVED. 1970, 29(3), 646-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--METAL INTERNAL FRICTION, IRON ALLOY, IRON COMPOUND, BORIDE,
BORON, HEAT RESISTANCE, EUTECTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0343 STEP NO--UR/0126/70/029/003/0646/0648
CIRC ACCESSION NO--AP0126099
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126099

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. DEPENDENCE OF THE INTERNAL FRICTION WAS STUDIED FOR THE FOLLOWING FE,B ALLOYS CONTG. 1.0, 1.45, 1.96, 3.06, 3.8, 5.0, 6.1, AND 8.83 WT. PERCENT B (THE LATTER COMPN. REPRESENTS THE DIBORIDE OF FE). IN 2 PHASE FE,B ALLOYS CONTG. SMALLER THAN OR EQUAL TO 6PERCENT B, 2 COUNTERACTING FACTORS DET. THE LEVEL OF THE HIGH TEMP. INTERNAL FRICTION: (1) THE BLOCKING ACTION OF FE SUB2 B AT BOUNDARIES OF ALPHA FE GRAINS; THIS EFFECT LOWERS THE HIGH TEMP. INTERNAL FRICTION, AND (2) THE LOWERING OF THE ALLOYS M.P. WITH INCREASING VOL. OF THE EUTECTIC; THIS EFFECT INCREASES THE HIGH TEMP. INTERNAL FRICTION. THE 2ND FACTOR WAS PREDOMINANT. AT A GIVEN TEMP., THE HIGHER THE INTERNAL FRICTION, THE LOWER WAS THE HEAT RESISTANCE OF THE ALLCY. THE STUDY ENABLED THE RELATIVE HEAT RESISTANCE OF VARIOUS FE,B ALLCYs TO BE EVALUATED. THE MAX. HEAT RESISTANCE AMONG HYPOEUTECTOIDAL ALLOYS WAS THAT OF AN ALLOY CONTG. SIMILAR TO 1PERCENT B. FACILITY: TUL. POLITEKH. INST., TULA, USSR.

UNCLASSIFIED

USSR

Automatic Control: Instruments

USSR

UDC 621.317

MEDEM, Ye. M. and GOLOVIN, V. I.

"A Device for Representing Vectors on the Screen of a Cathode Ray Tube"

USSR Author Certificate, Class G 01 r 13/02, No 340972, filed 12 Oct 70,
published 28 June 72 (from RZh-Avtomatika Telemechanika i Vychislitel'naya Tekhnika,
No 3, Mar 73, Abstract No 3 A334 P)

Translation: An apparatus is suggested for representing vectors on the screen of a CRT, containing deflection apparatus whose circuits can be commutated by a negative feedback commutator. To reduce the number of control channels in forming images of output signals from a computer, the inputs of the commutators are connected to the output of a flip-flop whose input comes through a delay line from the output of a logical OR unit. The inputs to the OR unit pass through a series-connected limiter, phase shifter, and input signal differentiating circuit. One illustration.

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USSR

UDC 621.396.932.1

GOLOVIN, V. M., MEL'NIKOV, E. A., SHUKHMIN, L. N.

"Effect of the Earth's Magnetic Field on the Errors of Radio Navigational Angle Meters with Ferrite Antennas"

Tr. aspirantov Fiz.-tekhn. fak. Voronezh. politekhn. in-t (Works of the Post-graduates of the Physical-Technical Department of Voronezh Polytechnic Institute), 1971, vyp. 2, pp 169-172 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5G73)

Translation: The maximum error in determining the arrival angle in radio navigational angle meters caused by variation of the magnetic permeability of the core material of the antenna under the effect of the Earth's magnetic field is estimated. It is demonstrated that this error has a sufficiently large magnitude and requires compensation. There is 1 illustration and 1 table.

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USSR

UDC 532.516

GOLOVIN, V. M., FAYNITSKIY, Yu. L.

"Transverse Flow Over a Circular Cylinder Undergoing Rotational Oscillations"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1971,
No. 35, pp 10-14 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8B723)

Translation: The problem of the transverse flow of a viscous incompressible liquid over a circular cylinder undergoing harmonic oscillations around the axis with an arbitrary frequency is discussed. A solution of the nonstationary equations of motion and energy described in the boundary layer approximation is sought by a numerical method. An explicit finite-difference scheme approximating the initial equations is given. The problem of obtaining boundary conditions at the critical point is considered. The stability of the finite-difference scheme is calculated. Calculations of the tangential stress on the surface of the cylinder and the Nusselt number are given for different values of the oscillation frequency of the cylinder. The results are analyzed. V. D. Vilenskiy.

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USSR

UDC: 532.5:532.135

GOLOVIN, V. M. and SAVIN, L. L.

"Nonstationary Currents in Non-Newtonian Fluids"

V sb. Materialy nauchno-tekhn. konferentsii. Kuybyshevsk. aviats. in-t (Materials of the Scientific-Technical Conference, Kuybyshev Aviation Institute) 1970, pp 75-77 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8B1169)

Translation: For non-Newtonian fluids whose flow curves can be approximated by a power rheological equation or the Shvedov-Bingham model, the conditions for establishing a stationary mode are considered in connection with a dissipative heat sink in the gap of a rotatory viscosimeter with a nonconducting inner cylinder and a constant temperature inside the cylinder. The curvature of the walls is neglected. Since stabilization of the hydraulic regime follows from stabilization of the thermal regime, the conditions for establishing the heat regime are considered. The solution to the problem is obtained in integral form; it is then found

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USSR

GOLOVIN, V. M., et al, V sb. Materialy nauchno-tekhn. konferentsii. Kuybyshevsk. aviats. in-t, 1970, pp 75-77

that the stabilization conditions depend on the magnitude of the parameter determining the rheological constants, their temperature dependence, and the width of the viscosimeter gap. It is shown that at the initial moment, the heat regime is established with infinitely high velocity (the heat flow to the outside wall of the cylinder is equal to infinity), which follows from the uniform heat source distribution over the fluid volume. G. B. Froysheter

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USSR

UDC 539.4

GOLOVIN, V. N., RYBAL'CHENKO, N. D., SOMOV, A. I., TRON', A. S., Khar'kov

"The Problem of the Strength of Nickel, Reinforced with Tungsten Fibers"

Problemy Prochnosti, No 11, 1971, pp 91-94.

ABSTRACT: Vacuum rolling is used to produce a nickel-tungsten fiber sheet composition material with a volumetric fiber content of from 4 to 16%. The specifics of deformation of fibers are studied in the process of combined rolling with the plastic matrix.

Certain mechanical properties of the composition are studied in extension, along with the nature of its rupture at 20-800°C.

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USSR

UDC 621.354.6

GOLICVIN, V.N., TER-SAAKOV, A.P.

"Problems Of Experimental Evaluation Of Waveguide Bunchers"

V sb. Uskoriteli (Accelerators--Collection Of Works), No 2, Moscow, Atomizdat, 1970, pp 102-104 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A362)

Translation: The paper notes that during evaluation of electron linear accelerators with increased requirements, an analytical presentation based on examination of an equation for phase oscillations and the approximate analytical method are unsuitable because of their insufficient precision. It is possible to obtain an improvement of the output parameters if extremal methods of evaluation are used during a choice of the dynamics of the particles in the electron linear accelerator. The problem is considered of a choice of criteria for optimization of the parameters. S.F.

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UDEN

UDO 621.384.6

GOLOVIN, V.N., SOBSNIN, N.P.

"Grouping Of Electrons In Section With Constant Phase Velocity And Constant Intensity Of Accelerating Field"

V sb. Uskoriteli (Accelerators--Collection Of Works), No 12, Moscow, Atomizdat, 1970, pp 111-116 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A326)

Translation: The paper considers the requirements imposed on the phase-energy distribution of particles at the input of a section with constant phase velocity so that at its output all the particles fall into the phase interval

$$\left[(\phi_{2k0} + \Delta_{2k}/2) - (\phi_{2k0} - \Delta_{2k}/2) \right]$$

where ϕ_{2k} and Δ_{2k} are respectively the phase of the equilibrium particle and the phase of the extended particle at the output of the aforementioned section. The phase of the zero accelerating field is taken as the beginning of readout of angles. A.K.

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USSR

UDC: 621.398.694.3:538.652

ABRAMOV, V. M., BARSKIY, B. R., VERTUSHKIN, B. A., GOLOVIN, V. V.,
ZORIN, V. M., KRINKIN, A. A.

"A Pneumatic Computer"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 8, Mar 71, Author's Certificate No 296091, division G, filed 17 Oct 68,
published 12 Feb 71, p 148

Translation: This Author's Certificate introduces a pneumatic computer which contains a single-diaphragm element with two nozzles which are coaxial with each other in the flow chamber of the element. The dead-end chamber of the element is connected to a multiplicand pressure source, and the inner nozzle is connected through a choke to a multiplier pressure source and directly to the output channel of the device, the annular channel formed by the nozzles being open to the atmosphere. As a distinguishing feature of the patent, the functional possibilities of the computer are extended by connecting the flow chamber of the element through a choke to a divisor pressure source.

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AA0051838

GOLOVIN Y. F. UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2-7c

243445 AUTOMATIC FIREARM PRACTICE TARGET CONTROL
comprises, a switch, rectifier and d.c.

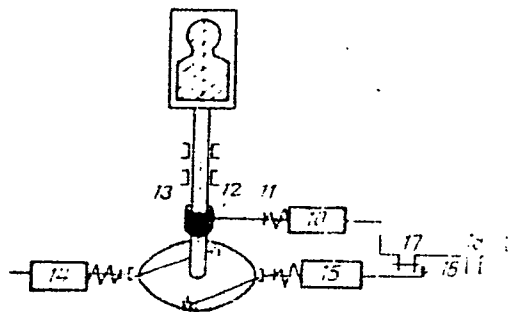
motor carrying a programming disc, and a relay with one normally closed contact and two normally open contacts. The brake unit comprises solenoid 10 whose core is connected to bush 12 around column 13 of the target via bar 11. The target is moved by solenoids 14 & 15, the tail in the core of the latter carrying lug 16 controlling contacts 17 & 8 in the circuit of solenoid 10. The rotation of the programming disc trips the relay which switches off solenoid 10 and energises solenoids 14 & 15. As a result, the target is moved so that its edge faces the rifleman, and lug 16 closes contact 18 energising solenoid 10 and holding down the target in the above position. The cycle is repeated in accordance with the geometry of the programming disc.

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7.7.67. as 1170709/40-23, GOLOVIN, Yu. F.
SHVEDOV, V.A. (15.9.69) Bul. 16/5.5.69. Class
72e, Int. Cl. F 41j.

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19820256

USSR

UDC 621.357.12.035.48:669.75

EUGENOV, YE. S., SAZONOVA, T. V., GOLOVIN, YU. M., and TYURKIN, YU. I.

"Regeneration of Sulfide-Alkali Electrolytes by Anode Solution of Cast Iron Shavings"

Alma-Ata, Khimiya i Khim. tekhnol. (Chemistry and Chemical Technology) Vyp 2, 1971, pp 160-163 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L373)

Translation: A process is described to remove thiosulfate-, polysulfides, and thioantimonates reducing the VI_k [expansion unknown] of Sb during the electrolysis of sulfide-alkali solutions by a method of anode solution of cast iron shavings. The above ions are scavanged under the influence of the divalent iron atoms and precipitate in the form of an insoluble precipitate of ferrous sulfide. For a D_a 9.0-9.5 a/m² and a temperature of 50°C the optimum maximum reduction in the undesirable impurities was observed. The solution purified in the above manner was then treated to remove by electrodeposition the Sb at a high energy rate.

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--LUMINESCENCE AND STRUCTURE OF PHENOXAZINE DYES -U-
AUTHOR--(04)-VACLAV, S., GOLOVINA, A.P., ALIMARIN, I.P., ZOROV, N.B.
COUNTRY OF INFO--USSR
SOURCE--VESIN. MOSK, UNIV., KHIM. 1970, 11(1), 74-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--LUMINESCENCE, DYE, MOLECULAR STRUCTURE, CHEMICAL INDICATOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1183 STEP NO--UR/0189/70/011/001/0074/0078
CIRC ACCESSION NO--AP0116648
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0116648
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DEPENDENCE OF LUMINESCENCE AND
ABSORPTION OF TITLE DYES ON THEIR STRUCTURE VARIATION WAS INVESTIGATED.
THE ABSORPTION MAX. AND LUMINESCENCE SPECTRA, THE INTENSITIES OF
LUMINESCENCE, AND THE ABSORPTIVITIES WERE MEASURED FOR ETOH SOLNS. OF
PHENOXAZINE, 3H,PHENOXAZIN,3,ONE (I), AND OF 12 OTHER DYES DERIVED FROM
I (SUBSTITUENTS ON I GIVEN): 8,9,CH=CHCH: CH, 7,0ET, 7,NH SUB2,
1,2,CH:CHCH:CH,7,NME SUB2, 1,2,CH:CH CH:CH,7,NET SUB2, 2,OH, 2,NH
SUB2,7,NPOSITIVE H SUB3,8,9,CH:CHCH:CH, 7,NH SUB2,8,9,CH:CHCH:CH,
1,7,ME(NME SUB2), 1,7,ME(NH SUB2), 1,7, OH(NH SUB2). FROM THE RESULTS,
CONCLUSIONS WERE DRAWN ON THE STRUCTURE OF PHENOXAZINE DYES. ALL THE
STUDIED COMPOS. EXHIBITED INDICATOR PROPERTIES; DEPENDING ON THE PH OF
THE MEDIUM THEY CHANGED NOT ONLY THEIR COLOR BUT ALSO THEIR
FLUORESCENCE.

UNCLASSIFIED

GOLOVINA, G. S.

STUDY OF ELECTRICAL CONDUCTIVITY OF A STREAM OF
HOT POWDERED FUEL.

Article by G. S. Golovina, A. V. Kabanovitch, the late R. N. Fomin, 1972
Yu. A. Ponomarev and R. I. Gurevich, Moscow, Novye metody i sredstva
dlya izucheniya i razvitiya teorii, 1972, pp. 51-53.

As was demonstrated in reference /1/, a change in the electrical conductivity of a burning mixture of gaseous and solid natural fuel during the flow is extreme in nature, with a maximum of conductivity in the zone of intensive transformation of the fuel. These data agree with the results of investigations /2/, in which their increased values of conductivity in the combustion zone were obtained in comparison with the products of combustion.

With reference to the process of combustion of natural solid fuel, which has undergone a whole complex of thermochemical transformations, it is not possible to have our work on unambiguous explanations of the presence of super-equilibrium concentrations of charged particles.

Considering the very complex chemical structure of coal, which in the process of combustion undergoes deep final chemical transformations both in its organic and in its mineral components, the presence of charged particles in the reacting flow may be explained by the change in heavy properties of the reacting system.

An increase in the concentration of charged particles in a flow of burning fuel is proper to processes of thermal decomposition of the solid part of the fuel, the combustion of the liberate volatile substances and the solid residue, the transformation from the surface of the solid particles of the fuel itself and the carbon black that is formed, thermal transformation of the mineral part of the fuel, vaporization and ionization of certain substances, etc.

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CHEREDKOVA, K.I.

STUDY OF ELECTRICAL CONDUCTIVITY OF A STREAM OF
HOT POWDERED FUEL

Article by G. S. Golubeva, A. V. Karpovichen, the late N. N. Fikht, 1972, No. 1, pp. 51-55.
Yu. A. Ponomarev and K. I. Cheredkova, Moscow, Novye metody i pribory dlya issledovaniya
toplivnykh vozdushnykh potokov, Rostov, 1972, pp. 51-55.

As was demonstrated in reference /1/, a change in the electrical conductivity of a burning mixture of gaseous and solid material fuel along the flow is extreme in nature, with a maximum of conductivity in the zone of intensive transformation of the fuel. These data agree with the results of investigations /2/, in which their increased values of conductivity in the combustion zone were obtained in comparison with the products of combustion.

With reference to the process of combustion of natural solid fuel, which has undergone a whole complex of thermochemical transformations, it is not possible to base our work on unambiguous explanations of the presence of super-equilibrium concentrations of charged particles.

Considering the very complex chemical structure of coal, which in the process of combustion undergoes deep final chemical transformations both in its organic and in its mineral components, the presence of charged particles in the reacting flow may be explained by the change in many properties of the reacting system.

An increase in the concentration of charged particles in a flow of burning fuel is proper to processes of thermal decomposition of the organic part of the fuel, the combustion of the fibrous, volatile substances and the solid residue, the emission from the surface of the solid particles of the fuel itself and the carbon black that is formed, thermal transformation of the mineral part of the fuel, vaporization and ionization of certain substances, etc.

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[1 - 0553 - 10]

VARSHAVA, B.

Chief Surgeon
LaSSR Sanipet station

VARSHAVA, B. JV

JPS: 54642

23 JUL-1 1973

ENVIRONMENTAL DECONTAMINATION

Chief Surgeon

LaSSR Sanipet Sta.

(1000-1)

①

AIR POLLUTION IN LATVIA DISCUSSED

Article by B. Varshava, chief surgeon of the Public sanitation-epidemiologic station, Ministry of Public Health, Riga, Latvian SSR, published in "Doklady Akad. Nauk Latv. SSR", 23 June 1973, p. 11.

The problem of protecting the surrounding environment from pollution is becoming more and more urgent. Concern for the health of the people, good flora and fauna is inseparably connected with concern for the purity of the air and water space, soil, and so forth. Much that is useful in this field has already been done.

However, the sanitary service of the republic cannot put up with the fact that some enterprises, departments, and executive committees of the Councils of Workers' Deputies are not accomplishing their functions in protecting the external atmosphere. For example, a number of enterprises in production of paper and dairy industry, and the production association "Grozitakstors" (textile association) and the production association "Grozitakstors" (textile association) have not yet begun to build protective purification structures which do not meet contemporary requirements.

Back in 1954, a general drainage scheme which was to be implemented in Riga was approved, but up to now they have not begun construction. Of the sewage which is dumped into the Daugava, a little more than 50,000 cubic meters are purified.

It should be said that in the republic a lag in the rates of construction of municipal drainage systems and purification structures behind the rate of putting dwellings into service has been noted. Of course, this has a negative effect on the sanitary condition of reservoirs and the public welfare of populated places. The Ministries of Construction and the Construction, and Municipal Services should work very intensively to accomplish the entire volume of work on purification systems planned for 1973.

UMAROV, G. Ya.

Solar Energy

17.5.5.55.55
21 July 75

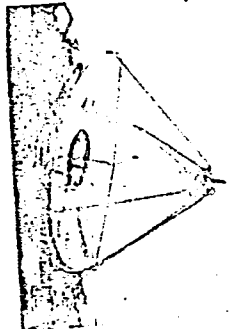
UFA 42
17-75

17.5.5.55.55
21 July 75
17-75

USE OF SOLAR ENERGY

(Article by Corresponding Member of the AS Uzbek SSR G. Ya. Umarov, Moscow, Vostochny Nauch. tsentr, Russian, No. 1, May 1974, pp. 85-87)

The Physico-Technical Institute Imeni S. V. Stroganovskiy of the AS Uzbek SSR does much work on the use of solar energy. Its program embraces the following main directions: the development and investigation of solar thermal installations for various purposes (solar energy concentrators, solar water heaters, solar heating and cooling equipment, solar energy accumulators, solar heating and cooling equipment, etc.), solar lanterns, portable and stationary solar decalors, etc., solar power plants and stations (gas-piston dynamic solar energy converters and solar power plants), and also high-temperature investigations in solar furnaces.



Automatic solar power plant with dynamic converter, created in the Physico-Technical Institute Imeni S. V. Stroganovskiy of the AS Uzbek SSR.

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UDC: 533.6.011.3

USSR

GOLOVINA, L. G., DEYCH, M. Ye., ZARYANKIN, A. Ye., ETT, V. V.,
Moscow

"Particulars of Gas Flow in Exit Cones at Near-Sonic Velocities"
Moscow, Izv. AN SSSR: Energetika i Transport, No 3, May/Jun
72, pp 123-128

Abstract: An investigation is made of the details of high subsonic and near-sonic compressible flow in a wind tunnel in the section where a cylindrical or converging profile meets a divergent channel (exit cone). It is found that an increase in the average value of the dimensionless velocity of gas flow in the initial section leads to an abrupt jump in longitudinal pressure gradients, as well as to an increase in nonuniformity of flow across the section. Under the effect of strong negative pressure gradients, degeneration of turbulence is observed in the section preceding the exit cone. This effect is a direct result of compressibility. The undesirable deformation of the velocity field preceding the exit cone combined with posi-

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USSR

GOLOVINA, L. G., Izv. AN SSSR: Energetika i Transport, No 3,
May/Jun 72, pp 123-128

tive pressure gradients in the divergent channel leads to flow detachment in the immediate vicinity of the neck of the tunnel, which is the cause of a critical drop in exit cone economy at high subsonic and near-sonic gas flow velocities. The degree of degeneration of turbulence is a function of the Reynolds number. Flow detachment can be delayed by increasing the Reynolds number as the relative velocity of gas flow in the input section increases.

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- 24 -

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTION OF PHENYLACETYLENE WITH SOME ORGANIC ARSENIC COMPOUNDS -U-
AUTHOR--(03)--KUZMIN, K.I., PANFILOVICH, Z.U., GOLOVINA, L.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 703
DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC ARSENIC COMPOUND, ACETYLENE HYDROCARBON, HEAT EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--2000/0888

STEP NO--UR/0079/70/040/003/0703/0703

CIRC ACCESSION NO--AP0124551

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 020

CIRC ACCESSION NO--AP0124551

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. REACTION OF R SUB2 ASI WITH A 2 FOLD EXCESS OF PHC TRIPLE BOND CH AND PYRIDINE BY PROLONGED HEATING ON A STEAM BATH GAVE R SUB2 ASC TRIPLE BOND CPH (R SHOWN): C SUB5 H SUB11, 25PERCENT, B SUB1 164-7DEGREES, D SUB20 1.0598, N PRIME20 SUBD 1.5480; SIMILAR REACTION WITH R SUB2 ASOAC IN THE PRESENCE OF PYRIDINE OR WITH R SUB2 ASOET WITHOUT THE BASE ALSO GAVE: R SUB2 ASC TRIPLE BOND CPH AND EITHER ACOH OR ETOH, RESP. PRODUCTS WITH R EQUALS BU OR C SUB5 H SUB4 WERE PREPD. BU SUB2 ASOAC B SUB1 85-7DEGREES, 1.1158, 1.4720; (C SUB5 H SUB11) SUB2 ASOAC B SUB1 106-7DEGREES; 1.0705, 1.4670. THESE WERE PREPD. FROM R SUB2 ASOBU AND AC SUB2 O.

UNCLASSIFIED

UDC 331.76:616.43-008.6

USSR

KARNAUKH, N. G., and GOLOVINA, L. YA., Krivorog Scientific Research Institute
of Industrial Hygiene and Occupational Diseases

"Endocrine Function in Hot Shop Workers"

Kiev, Vrachebnoye Delo, No 2, 1971, pp 123-126

Abstract: Examination of 60 apparently healthy workers 9 years or more on the job in hot shops (blast furnace, open hearth, converter) showed their levels of excretion of 17-hydroxycorticosteroids and aldosterone with urine to be significantly higher than those of the control group (17 repair men and mechanics). The results of the Thorn test of functional reserves of the adrenal cortex revealed that the original number of eosinophils in the peripheral blood of the hot shop workers was lower than in the control, an indication of increased adrenocortical function. The amount of insulin in the blood was found to be much higher in the hot shop workers. All these changes in endocrine function were fairly persistent since they were detected after a week's rest.

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UDC 621.384.664

USSR

GALYAYEV, N. A., GOLOVINA, N. I., GRACHEV, M. I., GRIDASOV, V. I., GUBRIYENKO, K. I., YEREMENKO, Ye. V., ZAPOL'SKIY, V. N., ZELENOV, B. A., KOTOV, V. I., KUZNETSOV, V. S., MERKER, E. A., MYZNIKOV, K. P., PUCHUGIN, V. A., PRILEPIN, A. A., SELEZNEV, V. S., SEREBRYAKOV, B. A., KHODYREV, Yu. S., and CHEPEGIN, V. N.

"Proton Beam With an Impulse of Up to 70 GeV/s Elastically Dispersed Inside a Target"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 7, 1972, pp 1437-1445

Abstract: This paper discusses the operation of a channel built into the French liquid-hydrogen Mirabelle chamber for the accelerator of the Institute of High-Energy Physics (IFVE). The function of the channel is to form pure beams of π and k mesons, and antiprotons, in a broad range of impulse magnitudes under the action of a high-frequency separator. The secondary particles are generated on the inside of a target placed in the path of a proton beam diverted from the accelerator with an energy of 70 GeV. By using a fast system for aiming the proton beam at the target, together with a kicker magnet in the channel, the required number of particles passing through the chamber can be provided. The optical system of the channel is described with the

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USSR

GALYAYEV, N. A., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 7, 1972,
pp 1437-1445

aid of diagrams of two possible variants; the beam aiming system and the particle dosage for the bubble chamber are also explained. The authors thank R. M. Sulyayev, P. F. Yermolov, A. M. Moiseyev, M. I. Solov'yev, I. A. Danil'chenko, Ye. A. Parshin, V. M. Kolesnik, A. N. Aleyev, V. D. Rudko, and V. M. Gorshkov for their assistance.

2/2

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1/2 024
TITLE--SMOTHERING OF DUST -U-

UNCLASSIFIED

PROCESSING DATE--27NOV70

AUTHOR--(03)-CHIZHKOV, YE.N., GOLOVINA, N.I., SHTERN, E.K.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,819

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--04FEB70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INDUSTRIAL HYGIENE, RESPIRATORY SYSTEM, SURFACE ACTIVE AGENT,
PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3002/1408

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128807

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0128807

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WETTING AGENTS, SUCH AS ALK. ESTS. OF PEAT, ARE USED TO SMOTHER DUST AT LOW TEMPS. PEAT AND AN AQ. 0.1-0.3N NAOH SOLN. WERE USED IN A 1:30-1:100 RATIO. FACILITY: CENTRAL SCIENTIFIC RESEARCH AND DESIGN CONSTRUCTION INSTITUTE OF PROPHYLACTICS FOR PNEUMOCONIOSES AND SAFETY TECHNIQUES.

UNCLASSIFIED

USSR

UDC 621.357.7:669.387:669.3-416

GOLOVINA, YE. S., KOCHEROVA, A. V., KOROTKOVA, T. S., BUVHINSKAYA, A. V.,
BONDAREV, V. V., and MALININA, I. G., State Scientific Studies and Design
Institute for Alloys and the Processing of Light Metals

"Electrochemical Process for the Treatment of the Surface a Copper Foil"

Author's Certificate No 338558, filed 16 Jul 70, published 9 Jun 72 (from
Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L299P)

Translation: An electrochemical process is patented for the treatment of the surface of copper foil during the preparation of foil-containing dielectrics. This includes the galvanic deposition on the surface of a layer of copper-cuprous oxide from a copper plating electrode. It is improved in that in order to increase the strength of the bond between the foil and the dielectric, the surface is additionally treated cathodically in a solution containing 10-70 g/liter of an alkali metal dichromate. For example, on the surface of a copper foil a microbuffing layer of copper oxide is deposited galvanically from a solution containing in g/liter: CuSO_4 , 100; H_2SO_4 , 75; NaCl , 0.058; and gelatin; 0.050 - 1.000. The process is performed using a D_k of 8 - 10 amps/dm², a temperature of 20 - 23°C for 0.5 - 1.0 minutes. The anode is lead. After

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USSR

GOLOVINA, YE. S., et al., Author's Certificate No 338558, filed 16 Jul 70,
published 9 Jun 72

rinsing with running the surface of the foil is supplementarily treated
cathodically in a 7% solution of potassium dichromate at a D_k of 1 - 2 amps/dm²
and a temperature of 20° for 30 seconds. Then the foil is washed in running
water and dried carefully, either by hot air or in a thermostat of 60 - 70°.

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Graphite

UDC 621.3.035.2

USSR

GOLOVINA, YE. S., SHIPKOV, N. M., KOTOVA, L. I., PERKOVA, G. A.,
DEMID, A. V., and RAKCHEYEVA, V. I.

"Reactivity of Graphite With Titanium and Silicon Additives"

Tsvetnyye Metally, No 3, Mar 71, pp 59-62

Abstract: The reactivity of graphite with added titanium (0-10%) and silicon (3 wt %) was studied in an active gas medium at high temperatures (2500 and 3000°K). It was established that the introduction of silicon alone, facilitating the technological process, only slightly increases the resistance of graphite in the active medium. The combined introduction of titanium and silicon significantly reduced the reactivity of the graphite.

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UDC 621.777.07

USSR

GUN, G. Ya., POLUKHIN, P. I., YAKOVLEV, V. I., GOLOVINOV, M. F., PRUDKAVSKIY,
B. A., KORSETSKIY, G. M., RYZHOV, A. F., and BRUNILIN, A. I.

"Optimal Die Designing for Pressing Aluminum Alloys"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"
1970, pp 139-199

Translation: Questions of optimal die designing are considered using a
computer. On the basis of statistical processing of a number of existing
dies and theoretical and experimental research, a method is proposed for
calculating the working belts and location of the center of gravity of a
section on the die. Five figures and three tables.

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USSR

UDC: 669.15--194:546.76

BASTUN, V. N., GOLOVINSKAYA, T. M., and CHERNYAK, N. I., Institute of Mechanics, Academy of Sciences, Ukrainian SSR, Kiev

"Investigating the Yield Point and the Structural State of the Initial Anisotropy of a Titanium Alloy"

Kiev, Fizika i Khimiya Obrabotki Materialov, Vol. 6, No. 5, 1970, pp 21-24.

Abstract: As the subject of their investigations, the authors chose tubes made of VT-1 titanium alloy. These were given uni-axial and biaxial stretching, and their structure was taken into account in the measurements. This approach was used because the effect of plastic deformation on the structural state has barely been touched on, and there are no data on the importance of the tension state of the material. The preliminary results of the tests showed that the material has significant anisotropy of the elastic and durability characteristics. Specimens were tubes with an outside diameter of 32.5 mm and a wall thickness of 2.2 mm; after the mechanical processing, the wall thickness was 0.7 mm and the diameter 30.5 mm. The tests were made on the TsDMU-

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USSR

BASTUN, V. N., et al., Fizika i Khimiya Obrabotki Materialov,
Vol 6, No 5, 1970, pp 21-24

30t machine, in which the specimens can be given axial loads and internal pressures in various permutations. In the experimental procedure, measurements of the longitudinal and transverse deformations were made through the use of mechanical tensometers with micron indicators. The radial deformations were found by computations based on the assumption of elastic change in the volume of the material. X-ray analysis showed that undistorted coarse-crystalline structure of α -titanium, and single-axial transverse stretching up to the point of 2% plastic deformation caused no marked change in the material's crystalline structure. There were structural variations in regions of small deformations only with deformation components coinciding with the tube axis.

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USSR

UDC: 621.374.4

GOLOVINSKIY, L. V., SMERTYGA, B. I.

"A Frequency Divider Based on Ferrite Diode Cells"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry-- collection of works), Vyp. 2, Moscow, 1970, pp 54-57 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G310)

Translation: The paper discusses problems of constructing frequency dividers based on magnetic cores with rectangular hysteresis loop with broad output pulses. A block diagram and a schematic diagram of such a divider are given. Consideration is given to the effect of various circuit parameters on reducing the peak of the output pulses. Experimental relationships are given for this drop as a function of the incoming frequency. Bibliography of two titles. Résumé.

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USSR

UDC 581.327.11

GOLOVIZNIN, K. M., ZARETSKAS, V.-S. S., RAGUL'SKIS, K. M., RUDGAL'VIS, B. V.,
~~PARUTIS, T. V.~~, Kaunas Polytechnical Institute

"A Device for Data Registration"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
1970, No 36, Soviet Patent No 288413, class 42, filed 23 May 69, published
3 Dec 70, p 154

Translation: This Author's Certificate introduces a device for data registration which contains a videographic tube with deflecting system, and a hollow drum with a carrier. As a distinguishing feature of the patent, the functional possibilities of the device are extended by installing additional electrodes along the printing line of the videographic tube. These electrodes are connected to one of the outputs of a trace module whose other output is connected to the beam current modulator of the tube, and the deflecting system is connected to the recording signal amplifier, the scanning oscillator and the input of the trace module respectively.

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USSR

UDC: 621.396.69:621.372.54(088.8)

BEL'MAN, M. Kh., BLINOV, B. V., KUKHAR', V. V., GOLOVIZNINA, N. V.,
RAZUMOVA, T. A.

"An Electromechanical Filter"

USSR Author's Certificate No 270125, filed 10 Dec 68, published 30 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V345 P)

Translation: An electromechanical filter is proposed with a T-shaped resonance element whose ends fit into gaps in magnetic systems of input and output converters interconnected by two permanent magnets. To improve the thermal stability of the filter, shunts of thermomagnetic alloy are connected in parallel with the permanent magnets.

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USSR

UDC: [621.313.32.011.23:536.483]001.24

BERTINOV, A. I., MIRONOV, O. M., GOLOVKIN, A. V., Moscow

"Inductive Reactances of a Cryogenic Synchronous Machine With Ferromagnetic Shield"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 61-65

Abstract: The principal inductive reactances of the straight sections of windings are determined in a synchronous machine with cryogenic cooling of the windings and with a magnetic-circuit shield. Engineering methods for calculating the inductive reactances are presented. The results of the studies are compared with the parameters of similar machines without a shield. It is found that a ferromagnetic shield over the windings of the generator increases the emf by a factor of 1.4-1.9 over machines without shielding. The ferromagnetic shield has practically no effect on the inductive reactances of differential scattering.

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1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--FORM COEFFICIENT OF SUPERCONDUCTIVE SYNCHRONOUS MACHINE FIELD -U-

AUTHOR--(04)-BERTINOV, A.I., GLOVAKIN, A.V., YEDOSHINA, L.A., NIPULOV,
O.M.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROTEKHNIKA (ELECTRICAL ENGINEERING), 1970, NO. 1, PP. 45-50

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SYNCHRONOUS GENERATOR, FERRUMAGNETIC SUPERCONDUCTIVITY,
MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REL/FRAME--3004/0250

STEP NO--UR/0292/70/000/001/0043/0046

CIRC ACCESSION NO--AP010177

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0130987

ABSTRACT/EXTRACT--(U) OF-C- ABSTRACT. THE USE OF SUPERCONDUCTIVE EXCITATION WINDINGS FOR SYNCHRONOUS MACHINES LEADS TO NEW CONFIGURATIONS WHICH REQUIRE MODIFICATION OF THE FUNDAMENTALS OF SUPERCONDUCTIVE MACHINE THEORY. IN THIS STUDY A SIGNAL EXPRESSION IS OBTAINED FOR DETERMINING THE RADIAL COMPONENT OF THE MAGNETIC FIELD INTENSITY IN CLOSED FORM AND THE FORM COEFFICIENT OF THE SUPERCONDUCTIVE SYNCHRONOUS MACHINE FIELD IS DETERMINED. THE DISTRIBUTION OF THE MAXIMUM OF THE MAGNETIC FIELD INTENSITY RADIAL COMPONENT ALONG THE RADIUS IS GIVEN AS A FUNCTION OF THE NUMBER OF POLE PAIRS AND THE RATIO OF THE GEOMETRIC DIMENSIONS OF THE EXCITATION WINDING. THE ANALYSIS SHOWS THAT THE HIGHER HARMONICS HAVE THE HIGHEST VALUE WITHIN THE WINDING.

1/2 007 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SYNTHESIS OF ENANTHOLACTAM BASED ON CYCLOPENTADIENE -U-
AUTHOR--(05)-ARTEMYEV, A.A., GENKINA, YE.V., GOLGVKIN, G.V., KONDNOV, N.E.,
MALINNOVA, A.B.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1137-40
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LACTAM, CYCLIC GROUP, HEPTANE, AROMATIC KETONE, OXIME
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605001/E04 STEP NO--UR/0080/70/043/005/1137/1140
CIRC ACCESSION NO--AP0139368
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0139368

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE MONOMER (I) WAS PREPD. BY A SERIES OF REACTIONS FROM CYCLOPENTADIENE (II). THUS, II WAS CONDENSED WITH C SUB2 H SUB2 AT 420DEGREES AND 2 ATM, THE RESULTANT CYCLOHEPTATRIENE HYDROGENATED CATALYTICALLY AT 25DEGREES, AND THE CYCLOHEPTANE PRODUCED WAS TREATED WITH NOCL PLUS HCL IN THE PRESENCE OF LIGHT, AND FINALLY THE CYCLOHEPTANONE OXIME HYDROCHLORIDE WAS ISOMERIZED TO I (IN 85-90PERCENT YIELD) AT 120-30DEGREES IN THE PRESENCE OF H SUB2 SO SUB4. FACILITY: GOS. NAUCH.-ISSLED. PROEKT. INST. AZOTN. PROM. PROD. ORG. SIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 632.95

BRYZGALOVA, N. I., GAVRILOVA, T. B., GOLOVKIN, G. V., KARAKHANYAN, L. L.

"Soviet Carrier Porochrome-1 for Gas Chromatographic Analysis of Pesticides"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-
neniya imi produktov nitaniya, kornov i vnesh. sredy (Works of the Second All-
Union Conference on the Investigation of Pesticide Residues and Preventive
Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp
38-43 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N418)

Translation: It is demonstrated that the Soviet carrier porochrome-1 inocu-
lated with hexamethyldisilazane can replace the foreign carrier chromosorb W
when analyzing pesticides by the gas chromatographic method with an electron
capture detector.

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UDC: 620.193.5

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TSEYTLIN, Kh. L., SOROKIN, Yu. I., BALASHOVA, A. A., BABITSKAYA, S. M.,
LEVIN, Ya. S., KONYUSHENKO, A. T., GOLDIKIN, R. V., and LADYZHINSKIY, B. S.,
Scientific Research Institute of Organic Intermediates and Dyestuffs

"High-Temperature Corrosion of Metals in Gaseous Ammonia"

Moscow, Zashchita Metallov, Vol. 6, no. 4, 70, pp 451-454

Abstract: Processes involving the use of ammonia are known to cause corrosion of equipment. The homogeneous reaction of ammonia dissociation in the gas phase begins above 1200--1300°C. In the presence of a catalyst this temperature drops to 300--400°C. Experiments have shown that the type of metal considerably affects the thermal dissociation of ammonia and that this effect is a function of temperature. This study describes in detail the testing and effects of gaseous ammonia on KhN10T steel, KhN78T, N70M27F, and Kh15N55M16V alloys, VT-1 titanium, and MZS copper. The analysis of experimental data shows that there is a fundamental correspondence between the effect of metals on ammonia dissociation and their resistance. Therefore, to insure continuous service of equipment in gaseous ammonia, it is advisable to use materials which

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USSR

TSEYTLIN, Kh. L., et al, Zashchita Metallov, Vol 6, no. 4, 70, pp 451-454

will not readily catalyze ammonia dissociation. Materials which are suitable for service under these conditions include carbon steel and N70M27F, Kh15N5516V alloys up to 400°C; Kh18N10T steel and nickel up to 300°C; KhN78T up to 600°C; aluminum, titanium, and copper up to 450°C. Considering the low specific gravity, good technological properties, relative availability, and low cost of aluminum, this metal is preferred in selecting materials for equipment operated in gaseous ammonia at high temperatures. A table illustrating the performance of the above metals during 400 hours of testing with gaseous ammonia at high temperatures, including corrosion rate tensile strength, relative elongation, % and Vickers hardness, prior to and after the experiment, is given in the original article.

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COLOVKIN, Y. A.

"Nonlinear Problem of Unstable Flow Around an Arbitrary Profile with Freely Deformed Vortex Wake"

Uch. zap. Tsentr. Aerogidrodinam. In-ta. [Scientific Writings of Central Aerohydrodynamics Institute], 1972, Vol 3, No 3, pp 1-11, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 B522, from the Resume).

Translation: The problem is studied of the unstable motion of an arbitrary piecewise-smooth contour in a flat stream of an ideal incompressible fluid. The Cauchy-Lagrange integral is transformed to a form expressing the pressure of the fluid on the profile directly through derivatives of the density potential of the dual layer distributed around the contour of this profile. The form of representation of the potential of perturbed velocities is found, using which the problem is reduced to an integral equation known from potential theory. When the configuration of the wake is defined, the solution of the integral equation is expressed in quadratures through the resolvent of this equation. A numerical method of calculation of the flow around the profile with determination of deformation of the vortex wake is also developed. The results of calculations for a profile performing harmonic oscillations are compared with the results of experiments

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USSR

GOLOVKIN, V. A., Uch. zap. Tsentr. Aerogidrodinam. In-ta., 1972, Vol 3,
No 3, pp 1-11.

and calculations based on the hypothesis of stability. 16 Biblio. Refs.

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- 16 -

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--NEUTRON DIFFRACTION STUDY OF ZIRCONIUM NITRIDE HYDRIDE -U-

AUTHOR--(05)--BYKOV, V.N., GOLOVKIN, V.S., LEVCHIK, V.A., KALININ, V.P.,
MIRCH, N.F.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 376

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--NEUTRON DIFFRACTION, ZIRCONIUM NITRIDE, HYDRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1995/0899

STEP NO--UR/007C/70/015/002/0376/0376

CIRC ACCESSION NO--AP0115409

UNCLASSIFIED

2/2 018
CIRC ACCESSION NO--AP0116409

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZRN SUBO.36 H SUBO.80 WAS STUDIED BY NEUTRON DIFFRACTION TO DET. THE LOCALIZATION OF N AND H ATOMS AND THE EFFECT OF N ON THE DISTRIBUTION OF H ATOMS IN THE HYDRIDE LATTICE. THE CLOSEST AGREEMENT BETWEEN THE EXPTL. AND CALCD. DATA WAS OBTAINED FOR THE PBAK3M1 MODEL. THE N ATOMS ARE LOCATED ON THE OCTAHEDRONS EVERY OTHER LAYER AND H ATOMS ON ALL TETRAHEDRONS, BUT THE NO. OF H ATOMS IN THE LAYERS CONTG. N ATOMS IS 4 TIMES SMALLER THAN IN THE N FREE LAYERS.

UNCLASSIFIED

USSR

GOLOVKIN, V. S., BYKOV, V. N., LEVDIK, V. A.

"Effect of an External Field on the Temperature Hysteresis of the Magnetic Structure of Chromium"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 6, Jun 72, pp 1783-1784

Abstract: In previous research by these same authors (DAN SSSR, Vol 201, 1971, p 1330) a change was observed in the sign of temperature hysteresis of the magnetic structure of chromium during transition of a single crystal from the "three-Q" state (ordinary chromium) to the "one-Q" state, which is characterized by the presence of domains with only modulation of spin density waves brought about by cooling the specimen through the Néel point in a strong magnetic field. In this paper a neutron diffraction study is made at $\lambda = 1.25 \text{ \AA}$ to determine the behavior of temperature hysteresis of ordinary chromium in the presence of a magnetic field, using the same iodide single crystal as in the previous work. The results confirm the conclusions of the previous research. It was found that low-temperature magnetic treatment is more effective than cooling through the Néel point in isolating the predominant modulation.

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USSR

UDC: 51

OGORODNEYCHUK, I. F., KUNIK, Ye. G., KUZEMIN, A. Ya., OSIYEVSKIY, A. G.,
GOLOVKO, L. A.

"Methods of Multiple-Criterion Optimization"

Priboiy i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Automation Systems and Devices. Republic Interdepartmental Thematic Scientific and Technical Collection), 1973, vyp. 27, pp 43-54 (from RZh-Matematika, No 9, Sep 73, abstract No 9V589 from the authors' abstract)

Translation: A survey is done on a series of methods of solving optimization problems having several quality criteria. As an object of optimization, the authors examine the yearly program of an enterprise with three goal functions (quality criteria). A method is described for solving problems of optimizing an object with many criteria with application of a random search algorithm. Bibliography of 14 titles.

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- 10 -

USSR

UDC: 678.5.06-419.8.004.878.106.3

GOLOVKO, L. I., GIMZAR, K. A., KUBOVICH, S. V.

"Protection of Fiberglass Plastics by Polyurethane Coatings"

Kiev, Khimicheskaya Tekhnologiya, No 1(61), Jan/Feb '72, pp 28-29

Abstract: The authors investigate the feasibility of using polyurethanes to improve the weather resistance and the durability of polyester plastic reinforced with fiberglass. The paper gives the results of a study of the water and chemical resistance of hardened copolymers of an unsaturated oligoester with styrene, coated with polyurethane. PU-1 binder was used for the study (polydiethyleneglycol malate phthalate with styrene) with cold-setting U-40 polyurethane lacquer. The coatings were applied with an atomizer in two layers to make a total thickness of 30-40 microns. The prepared specimens were kept in distilled water for 100-700 hours at 25°C. Losses of static bending strength amounted to 42-55% for unprotected specimens and 3-10% for coated specimens. Loss of impact strength for unprotected plastic was 75% after 700 hours, the corresponding loss for coated plastic being only 20%. The strength of the protected plastic was 2-3 times that of the initial oligoester at the end of the tests. Swelling of unprotected specimens reached 3.3% after 100 hours at 25°C with a 5% loading; after 100 hours, swelling of a coated

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USSR

GOLOVKO, L. I., et al., Khimicheskaya Tekhnologiya, No 1(61), Jan/Feb 78,
pp 28-29

specimens levels off at 4.5%. Protected copolymers also show appreciably
greater resistance to the effects of caustic soda.

c/2

USSR

UDC 621.762.224:669.14.018.253

PETROV, A. K., LEVITIN, V. V., MIROSHNICHENKO, I. S., AKIMENKO, V. B., ANDREYEVA, A. YA., BATENEVA, M. K., ~~GOLOVKO, V. A., LABUNOVICH, O. A., ORLOV, YU. G., and ORMAN, K. Z.,~~ Ukrainian Scientific Research Institute of Special Steels, Alloys and Ferroalloys, Dnepropetrovsk State University

"Study of Atomized Powders of High-Speed Steel and Blanks Made of Them"

Poroshkovaya Metallurgiya, No 3, Mar 71, pp 9-14

Abstract: This work was performed in order to study the structure of powders of high-speed steel produced by atomizing of liquid steel with a stream of pure argon applied to a stream of metal through a slit diaphragm at a pressure of 6-8 atm. For comparison, one melt was atomized using compressed air at 14-16 atm under industrial conditions. The structure and phase composition of the initial powder, powder after heat treatment, and blanks made from the powder were studied. Blanks produced by

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USSR

PETROV, A. K., et al., Poroshkovaya Metallurgiya, No 3, Mar 71,
pp 9-14

hydrostatic pressing with subsequent sintering had a fine-grain structure with evenly distributed carbides. The structure corresponded to a hardness of 65 HRC after tempering at 560° and 61 HRC after tempering at 620°. This indicates the possibility of producing blanks from atomized powders of high speed steel.

2/2

- 62 -

USSR

UDC [537.226+537.311.33]:[537+535]

GOLOVKO, V. G., and SEMENOV, A. I.

"Thermoelectromotive Force of p-Type Silicon Under Uniaxial Compression"
Elektron. tekhnika. Nauch.-tekhn. sb. Upr. kachestvom i standartiz. (Electronic Engineering. Collection of Scientific and Technical Works on Quality Control and Standardization), 1971, vyp. 4(10), pp 37-40 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1465 by authors)

Translation: The authors consider the tensor thermoelectromotive force of p-Si alloyed with B in a concentration of 10^{18} cm⁻³ under uniaxial compressive strain in the [111] direction. A measurement method is employed which eliminates the effect of variation in thermal resistances at the ends of a specimen under compression. Results are compared with theoretical tensor thermoelectromotive force values obtained on the basis of the theory of PIKUS and BIR.

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USSR

UDC 621.375.421.029.62

GALASHENKOV, V. N., GOLOVKOV, A. A., KRAYCHIK, A. B.

"Wide-Band Transistorized Power Amplifiers in the Meter Range"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 100-102

Abstract: Two versions of transistorized amplifiers with wide-band matching circuits executed on the basis of filter circuits assembled with common base and emitter are presented. They have Chebyshev characteristics. A schematic is presented of an amplifier operating in the frequency range of 95-155 megahertz and assembled from three transistors with parameters analogous to the 2N3375 transistor with a common base. The output circuit of the amplifier matching the output impedance of the third cascade with a 50 ohm load was made three-element and insures a load resistance for the output transistor of 30 ohms. The overall dimensions of this amplifier are $140 \times 30 \times 20 \text{ mm}^3$. The mean output power in the operating range is 3.2 watts, and the power amplification coefficient $K_p \sim 23$ decibels.

The second version of the amplifier for the 220-290 megahertz range was assembled from two transistors analogous to the 2N3632 with a common emitter. The input and intercascade circuits are two-element to match the input impedance of the transistor with the generator and the output impedance of the transistor. The intercascade matching circuit insures a load resistance for $1/2$

USSR

GALASHENKOV, V. N., et al., Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 100-102

the first transistor of 40 ohms. The mean output power in the operating range is 9 watts, the power amplification coefficient was 10 decibels, and the efficiency, 43 percent.

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- 5 -

AA0040628- GOLOVKOV G.V., UR 0482

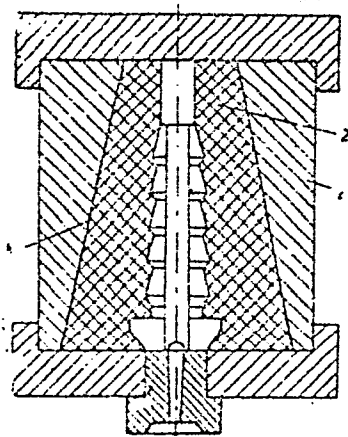
Soviet Inventions Illustrated, Section I Chemical, Derwent,

234642 PLASTIC COMPONENT PRESS MOULD comprises a split case 1 with a runner and a demountable shaped cavity 2 made of rubber with a slit 3. The cavity is taken out from the carcass when the poured plastic is solidified, and is opened up along the slit.

AUTHORS: Beylin, A. M.; Reynsburg, A. M.; Bondar', M. Yu.;
Ripman, D. M.; Bakunin, V. A.; and Golovkov, G. V.

19750185

AA0040628



27.12.65. as 1045751/23-5, BEILIN, A.M. et al.
(26.6.69) Bul. 4/10.1.69. Class 39a² Int. Cl.
B 29c.

19750186

1/2 012 UNCLASSIFIED PROCESSING DATE--3000170
TITLE--ALPHA DECAY OF PRIME211 RN AND PRIME212 RN -U-
AUTHOR--(05)--AFANASYEV, V.P., BOCHVAROVA, M., GOLOVKOV, N.A., GROMOVA,
I.I., IVANOV, I.I.
COUNTRY OF INFO--USSR
SOURCE--LAB. OF NUCLEAR PROBLEMS. 1970. 11P. DEP. CFSTI
DATE PUBLISHED-----70
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS
TOPIC TAGS--ALPHA DECAY, SPECTROGRAPH, RADON ISOTOPE, POLONIUM ISOTOPE,
RADIOACTIVE DECAY, ASTATINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0174 STEP NO--UR/0000/70/000/000/0011/0011
CIRC ACCESSION NO--AT0127798
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 012

CIRC ACCESSION NO--ATO127798

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALPHA DECAY OF PRIME211 RN AND PRIME212 RN WAS INVESTIGATED USING THE MAGNETIC SPECTROGRAPH. BESIDES THE KNOWN ALPHA TRANSITIONS OF PRIME211 RN (5850 KEV (1), 5783 KEV (1.84), 5616 KEV (0.08)) THERE WERE OBSERVED THE NEW ONES: 5466 KEV (2 TIMES 10 PRIME NEGATIVE4), 5276 KEV (4.4 TIMES 10 PRIME NEGATIVE4, 5179 KEV (8 TIMES 10 PRIME NEGATIVE5) 5055 KEV (2 TIMES 10 PRIME NEGATIVE5). THE HINDRANCE FACTORS ARE PRESENTED. NEW LEVELS: 391.4 EKV, 585 KEV, 684 KEV ARE INTRODUCED FOR THE PRIME207 PO NUCLEUS. FOR PRIME212 RN THE 5588 KEV (5 TIMES 10 PRIME NEGATIVE4) ALPHA TRANSITION TO THE 687 KEV LEVEL OF PRIME208 PO, WAS OBSERVED. THE PARTS OF ALPHA DECAY OF PRIME211 AT, PRIME211 RN AND PRIME207 PO (41.3 PLUS OR MINUS 1.3PERCENT AND 0.028 PLUS OR MINUS 0.003PERCENT) ARE ESTIMATED. FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA USSR.

UNCLASSIFIED

Acc. Nr:

AP0046552 -

Raf. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya
Biologicheskaya, 1970, Nr 1, pp 53-57

G. K. SKRYABIN, E. L. SOLOVLEV, L. P. VOLYNKINA

ON THE QUESTION OF THE METHODS AND CRITERIA OF THE SELECTION OF
PRODUCTIVE CULTURES OF HYDROCARBON ASSIMILATING MICROORGANISMS

Institute of Biochemistry and Physiology of Microorganisms, Pushchino

The basic criteria of selection of highly productive hydrocarbon assimilating cultures — the specific growth rate and productivity have been studied.

It was shown that growing of mixed cultures under continuous conditions with an increasing rate of dilution the washing out of different strains proceeds in accordance with their maximal specific growth rates. Due to such selection a culture becomes concentrated possessing a high specific growth rate.

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REEL/FRAME

19781815

6

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MOSSBAUER EFFECT ON PRIME121 SB NUCLEI IN YTTRIUM IRON GARNET -U-

AUTHOR--(04)-GOLOVNIN, V.A., IRKAEV, S.M., KUZMIN, R.N., MILL, V.V.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 1, P. 35-7 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--MAGNETIC FIELD, MOSSBAUER EFFECT, ANTIMONY ISOTOPE, ATOM,
NUCLEUS, YTTRIUM, IRON, GARNET, DIAMAGNETISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/1751

STEP NO--US/0000/70/011/001/0035/0037

CIRC ACCESSION NO--AP0133656

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133656

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE INVESTIGATION REVEALED A
SUPEREXCHANGE INDUCTION OF MAGNETIC FIELDS ON THE DIAMAGNETIC SB ATOMS.

FACILITY: MOSCOW STATE UNIV. USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--AMINES IN VOLATILE SUBSTANCES OF RUSSIAN CHEESE -U-

AUTHOR--(04)-GOLOVNYA, R.V., ZHURAVLEVA, I.L., MIRONOV, G.A., ABDULLINA,
R.M.
COUNTRY OF INFO--USSR G

SOURCE--MOLOCH. PRM. 1970, 31(2), 8-11

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED ANIMAL PRODUCT, FOOD ANALYSIS, AMINE, CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0519

STEP NO--UR/0333/70/031/002/0008/0011

CIRC ACCESSION NO--AP0113410

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113410

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMINE CONTENT OF VOLATILE SUBSTANCES OF 4 AND 10 MONTH OLD RUSSIAN CHEESE, STORED AT NEGATIVE 3DEGREES AND 85-7PERCENT HUMIDITY, WAS ANALYZED BY GAS LIQ. CHROMATOG. THE TOTAL AMT. OF AMINE CHLOROHYDRATES IN 500 G CHEESE INCREASED FROM 23 TO 29.4 MG. THE QUAL. COMPN. OF THE 21 IDENTIFIED AMINES DID NOT CHANGE SIGNIFICANTLY BUT THE AMTS. OF PIPERIDINE (I) AND ALPHA PICOLINE (II) INCREASED FROM 0.4 TO 15.4 AND FROM 7.5 TO 52.4PERCENT, RESP., AND THAT OF PRIMARY, SECONDARY, AND TERTIARY AMINES DECREASED. THE CONTENTS OF I, II, PYRIDINE AND ET SUB3 N WERE DETD. FACILITY: -INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.11:543.422.25:541.49:547.551:547.822.3:547.1'118

GOLOVNYA, R. V., ZHURAVLEVA, I. L., ZENIN, S. V., POLYAKOV, V. A.,
SERGEYEV, G. B.

"Determining the Thermodynamic Characteristics of the Complex Formation of
Amines with Alkyl and Aryl Phosphates by the Nuclear Magnetic Resonance Method"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973,
pp 2595-2597

Abstract: The equilibrium constants, enthalpy variation, entropy variation and chemical shifts were obtained for complex formation of analine with tri-ethyl phosphate and tri-p-tolyl phosphate and piperidine with tri-o,p-xylenyl phosphate. The complex formation of pyridine with triphenyl phosphate was detected. The complex formation of phosphates with amines takes place both by the path of formation of the hydrogen bond $NH...O=P$ and $N\delta^-...P\delta^+$ bond. A method is proposed for determining the complex formation constants from the nuclear magnetic resonance data for comparable concentrations of the components. The process of complex formation in the given systems follows from the fact that on the addition of phosphates to the amine solution, the signals from the protons of the NH groups shift in the direction of the weak field.

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Nitrogen Compounds

USSR

UDC 543.544.25:547.233

GOLOVNYA, R. V., and ZHURAVLEVA, I. L., Institute of Hetero-Organic Compounds,
Academy of Sciences USSR

"The Substitution of Trisodium Phosphate for Alkali in Gas Chromatographic
Analysis of Aliphatic Amines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, 1973, p 482

Abstract: The substitution of Na_3PO_4 for alkali in the treatment of chromatographic carriers in gas chromatography of aliphatic amines was found to give greater column stability, reproducibility, and the resolution of the amines. A column with PEG-1000 and Na_3PO_4 , for example, functioned satisfactorily for over 10 months. The superior results are apparently due to the formation of hydrogen bonds between the $-\text{NH}_2$ and $-\text{NH}$ groups and the oxygen of the $-\text{P}=\text{O}$ group, and $\text{N}^{\delta-} \dots \text{P}^{\delta+}$ bonds.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--USE OF AN EQUIVALENT ISOTHERMAL RETENTION INDEX FOR IDENTIFICATION
IN GAS CHROMATOGRAPHY WITH LINEAR TEMPERATURE PROGRAMMING -U-
AUTHOR--(02)-GGLOVNYA, R.V., URALETS, V.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 679-80.
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS CHROMATOGRAPHY, ISOTHERM, TEMPERATURE TEST, ALDEHYDE,
KETONE, CARBONYL COMPOUND, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2106

STEP NO--UR/0062/70/000/003/0679/0680

CIRC ACCESSION NO--AP0125690

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 017

CIRC ACCESSION NO--AP0125690

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EQUIV. ISOTHERMAL INDEX I
SUBTC-BETA SUGGESTED EARLIER BY THE AUTHORS (1968) CAN BE USED FOR
DEPENDABLE IDENTIFICATION OF SUBSTANCES IN GAS CHROMATOGRAPHIC ANAL.
WITH LINEAR TEMP. PROGRAMMING. TABULATION OF INDEX VALUES WAS MADE FOR
ALDEHYDES, 2,4 UNSATD. ALDEHYDES, 2 UNSATD. ALDEHYDES AND ME KETONES.
IT WAS POSSIBLE TO IDENTIFY IN MIXTS. SUCH CARBONYL COMPOUNDS. AS
HEXANAL, 2 HEXANONE, 2 PENTENAL, HEPTANAL, 2 HEPTANONE, AND RELATED
COMPODS. UP TO C SUB11. FACILITY: INST. ELEMENTOORG. SOEDIN.,
MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.

AP0048472

Abstracting Service:
CHEMICAL ABST. 570

Ref. Code:

2180070

104822x Thermal expansion of ammonium dihydrogen phosphate and deuterated ammonium dihydrogen phosphate in the region of the antiferroelectric phase transformation. Boiko, A. A.; Golovnin, V. A. (Inst. Fiz. Tverd. Tela, Chernogolovka, USSR). *Kristallografiya* 1970, 15(1), 186-9 (Russ). Spon-taneous deformation of the unit cell of $\text{NH}_4\text{H}_2\text{PO}_4$ (ADP) and $\text{ND}_4\text{D}_2\text{PO}_4$ (DADP) single crystals near their paraelec.-anti-ferroelec. phase transitions were studied by x-ray diffraction. The temp. dependences of the lattice consts. (a , b , c), coeff. of thermal expansion (α_1 , α_2 , α_3), and coeff. of vol. thermal expan-sion β were deduced from the (10.00), (0.10.0), and (008) reflec-tions. A temp. hysteresis of $\sim 2^\circ$ was established at the phase transitions of ADP and DADP at $\sim 150^\circ$ and $\sim 235^\circ\text{K}$, resp. In the paraelec. phase of ADP and DADP, α_1 decreases and α_2 increases with decreasing temp; near the T_c their common value is $\sim 20 \times 10^{-6} \text{ degree}^{-1}$. Discontinuous pos. and neg. changes of α_1 and α_2 , resp., were obsd. at the T_c . In the antiferroelec. phase β is anomalously low even at $\sim 40^\circ$ below the T_c while both α_1 and α_2 in the paraelec. phase behave anomalously only $\sim 1-2^\circ$ above the T_c . P. Glogar

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REEL/FRAME
19800180

187

USSR

UDC 533.9.082.5

GOLOVOROD'KO, V. T., KISELEV, Yu. M.

"Utilization of the Doppler Effect for Measurement of Plasma Velocity"

Teplofizika Vysokikh Temperatur, Vol 9, No 6, 1971, p. 1248-1252.

Abstract: An apparatus and method are described for measurement of the velocity of directed motion of a plasma. High-resolution spectrometers are also described, allowing measurement of velocity on the basis of the natural radiation of a plasma in the 10^2 - 10^6 m/sec range with an error of 3%. Interpretation of the results of measurement involving recording of doppler shifts of the spectral lines is studied.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--REMOVAL OF TANNINS FROM SOLUTIONS OF COLLAGEN CONTAINING BY
PRODUCTS FROM THE LEATHER INDUSTRY -U-
AUTHOR--YAZYKOV, V.K., GOLOVTEYEVA, A.A.

COUNTRY OF INFO--USSR

SOURCE--KOZH.-OBUV. PROM. 1970, 12(1), 29-32

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--LEATHER, TANNING MATERIAL, COLLAGEN, INDUSTRIAL WASTE
TREATMENT, GLUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0207

STEP NO--UR/0499/70/012/001/0029/0032

CIRC ACCESSION NO--AP0106863

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106863

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEATHER WASTE IN THE FORM OF SPLITS CONTG. CR SUB2 O SUB3 3.63PERCENT, "WELDING TEMP." (A MEASURE OF THE CHEM. AFFINITY OF THE TANNING AGENT TO COLLAGEN) 106DEGREES, WAS SOAKED 8 HR AT 18-22DEGREES IN A SOLN. CONTG. 100 G NAOH AND 150 G NA SUB2 CO SUB3-L. AT A LIQ.-CHARGE RATIO OF 3:1, THEN WASHED UNDER THE SAME CONDITIONS FOR 12 HR IN 25 G NA SUB2 CO SUB3 SOLN.-L. THE PRODUCT WAS WASHED IN RUNNING WATER FOR 0.5 HR IF IT WAS TO BE DISSOLVED IN AN ALK. MEDIUM OR FOR 4 HR IF IN AN ACID MEDIUM. IT HAD A FUSION TEMP. OF 49.6DEGREES, AND CONTAINED 0.46PERCENT CR SUB2 O SUB3. THE LOSS OF PROTEIN WAS 4.1PERCENT. IT WAS DISSOLVED BY HEATING IN WATER FOR 2 HR AT 80DEGREES, OR SOAKED IN 25PERCENT HOAC FOR 1 HR AT A LIQ. CHARGE RATIO OF 0.3:1, THEN HEATED IN WATER UNTIL DISSOLVED. THE SOLNS. OBTAINED WERE USED FOR FILLING LEATHER OR FOR THE PRODUCTION OF GLUES AND GELATIN. INCREASING THE AMT. OF NAOH IN THE DETANNING SOLN. OR INCREASING THE TIME OF TREATMENT INCREASED THE DETANNING, BUT ALSO INCREASED THE LOSS OF PROTEIN.

UNCLASSIFIED

Inorganic Compounds

USSR

UDC 548.0:537.228.4

SINYAKOV, YE. V., GOLOVYANKO, A. A., and SAVCHENKO, V. G., Dnepropetrovsk State University

"Electro-optical Properties of Single Crystals of $\text{BaTiO}_3\text{-Ta}_2\text{O}_5$ Solid Solutions"

Moscow, Akademii Nauk SSR Kristallografiya, Vol 16, No 3, May-Jun 71, pp 553-556

Abstract: To clarify the effect of replacing Ti^{+4} ions in BaTiO_3 with Ta^{+5} ions on the electro-optical properties of barium titanate monocrystals, the temperature functions of quadratic electro-optical coefficients $n_0^3(R_{11}-R_{12})$ and $n_0^3R_{44}$ of single crystals of $\text{BaTiO}_3\text{-Ta}_2\text{O}_5$ solid solutions were investigated. Different impurity concentrations were used (Ta_2O_5 content: 0.05, 0.1, 0.2 and 0.3 mol %). The measurements were taken above the Curie point by optical polarization at $\lambda = 6328 \text{ \AA}$ with a 50 Hz AC field applied to the crystal along the [100] and [110] axes. Mirror-surface crystals were selected and prepared into $1.5 \times 0.8 \times 0.25 \text{ mm}$ specimens. The light was propagated perpendicular to the (001) plane. It was found that with an increase in the impurity concentration, electro-optical coefficients rise sharply (particularly the coefficients

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USSR

SINYAKOV, YE. V., et al., Akademii Nauk SSR Kristallografiya, Vol 16, No 3, May-Jun 71, pp 553-556

$n_0^3(R_{11}-R_{12}))$ and this rise is the more pronounced, the closer the measurements are made to the Curie point. At 20-30° from the Curie points the electro-optical coefficients of the $\text{BaTiO}_3\text{-Ta}_2\text{O}_5$ solid solutions are practically identical to those of pure barium titanate. The rise in coefficients made close to the Curie point was shown to be caused by the reduction in the difference between the Curie point and the Curie-Weiss temperature obtained from electro-optical measurements.

2/2

- 7 -

USSR

UDC 632.95

KHODZHAYEVA, F. A., GOLOVYASHKINA, L. F., and MUKHITDINOVA, N. A.

"Reaction of the Isomeric Monobromacrylic and α, β -Dibromacrylic Acids with Aniline"

V sb. Sintez vysokomolekul. soyedin., (Collection of Works: High-Molecular Compounds), Tashkent, Fan, 1972, pp 58-62 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 23N434 by T. A. Belyayeva)

Translation: Anilides and substituted phenyl esters of isomeric monochloracrylic acids possess a high herbicidal and fungicidal activity. In order to synthesize new pesticides with high effectiveness, the reaction of isomeric monobromacrylic and α, β -dibromacrylic acids with aniline was studied. Physical and chemical properties of the obtained anilides of the above acids are given.

1/1

USSR

UDC 615.372.576.851.5517.012

GOLSHMID, V. K., and ZAKGEYM, D. A., Moscow Institute of Vaccines and Sera
~~Imeni Kechnikov~~

"Separation of the Toxic Component of Incompletely Detoxified Tetanus Toxin
on DEAE-Cellulose"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971,
pp 109-113

Abstract: Fractionation of partly neutralized tetanus toxins on DEAE cellulose showed that this is a promising method of decreasing the residual toxicity of the toxins. The tetanus toxins and toxoids under study were dissimilar in physical and chemical properties and were extracted with DEAE cellulose at fairly wide concentrations of the buffer solution, although the conditions of elution of these preparations with the ion exchanger were different. The substances responsible for the toxicity and antigenic activity of the toxins were mostly (over 90%) eluted with the buffer at 0.05 M concentration of sodium chloride. The bulk of the antigenic substance of the crude toxoids was extracted at 0.2 M concentration of sodium chloride, only a slight amount at 0.3 and 0.5 M NaCl. The differences in degree of sorption on the DEAE cellulose of the specific antigens of tetanus toxins and toxoids were due to differences in their electric charge.

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- 35 -

USSR

UDC 615.371:576.851.49].015.4:612.124.017.1

BOGOYAVLENSKAYA, L. V., and GOLSHMID, V. K., State Control Institute of Medical Biological Preparations imeni Tarasevich and Moscow Institute of Vaccines and Sera imeni Mechnikov

"The Role of IgA-Immunoglobulins as Agglutinins in Salmonella Sera"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, pp 59-65

Abstract: O, OH, and H Salmonella rabbit sera were separated into fractions by ion-exchange chromatography and sephadex gel filtration. In the second peak of the second fraction, antibodies resistant and nonresistant to cysteine hydrochloride were identified. The resistant antibodies are IgG globulins, while the nonresistant antibodies include IgM and IgA globulins. O agglutinins in Salmonella rabbit sera are made of IgM globulins, while H agglutinins are made of 7S proteins. Both IgA and IgG globulins develop after repeated administration of Salmonella antigens and are active in the agglutination reaction.

1/1

Microbiology

USSR

UDC 615.372.576.851.553

DRACHENNIKOV, V. I., GOLSHMID, V. K., REZEPOV, F. F., and CHENTSOVA, O. I.,
State Control Institute imeni Tarasevich and Moscow Institute of Vaccines
and Sera imeni Mechnikov

"Immunochemical and Biological Characteristics of Botulinus Type A Toxoids.
II"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971,
pp 12-18

Abstract: DEAE-cellulose chromatography revealed that the specific antigen
of botulinus type A toxoids is heterogeneous in physicochemical properties.
Separation of the toxoids on DEAE-cellulose yielded a fraction containing
over 50 percent of the total antigenic activity and free from nucleic acids
and pigments. Its specific activity was almost double that of the original
preparation. No relationship was found between the charge of the specific
molecules of the toxoids and their molecular weight. Purification of the
toxoids on DEAE-cellulose resulted in removal of the ballast substances
with no impairment of the immunogenic properties of the active fraction.

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USSR

UDC 615.919"598.127.011.5.074.543.544

POGUDA, A. A., CHERTKOVA, F. A., and GOLSHMID, V. K., State Control Institute of Medical and Biological Preparations imeni Tarasevich, and Moscow Scientific Research Institute of Vaccines and Sera

"Composition of Viper Venom as Determined by Column Chromatography"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 7, 1971, pp 45-47

Abstract: Fractionation of Vipera lebetina venom on Sephadex G-100 revealed two protein peaks. The lethal factor and coagulase were associated with the first peak, hemolysin with the second, and hyaluronidase with both. However, fractionation of the venom on Sephadex G-200 resulted in the separation of all four factors. Besides the main molecular forms, it revealed additional fractions of lethal, hyaluronidase, and hemolytic activity. When ion-exchange chromatography on DEAE-cellulose was used, the lethal factor, coagulase, and hyaluronidase could not be separated. Hemolysin was obtained, but when injected intravenously into mice it failed to kill any of the animals or produce noticeable pathological changes.

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USSR

UDC 615.372:576.851.551:577.23

GOLSHMID, V. K., and ZAKGEVN, D. A., Moscow Institute of Vaccines and Sera
imeni Mechnikov

"Determination of the Size of Specific Molecules in Preparations of Tetanus
Toxins and Toxoids"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71,
pp 91-93

Abstract: In view of the fact that the purity of sera and vaccines depends on proper selection of the method of purification, and since according to some investigators, tetanus toxoids form polymers with sedimentation constants from 10.1 to 110 S when the concentration of proteins in the initial toxin solution is about 1%, an investigation was conducted to determine whether such polymers are formed when the toxins are prepared by standard industrial methods. The tests were done on toxins and toxoids of Kolle strains No 154 and 471 grown on casein. Toxicity was tested on white mice. Results obtained by gel-filtration revealed the presence of the tetanus toxin monomer with a molecular weight of 67,400, the tetanus toxin dimer with MW 140,000, and the tetanus toxoid dimer with MW 149,000; the respective Stokes' radii

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GOLSHMID, V. K., et al, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii,
No 5, May 71, pp 91-93

were 30, 48, and 51 angstroms. There were no polymers in the preparation.
These findings may be useful in the selection of the most suitable purification method.

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UDC 576.851.555.097.29

KULAK, V. G., GOLSHMID, V. K., NENASHEV, V. P., GLUSHKOVA, A. I. and YANISHEVSKAYA, M. N., Moscow Institute of Vaccines and Sera imeni Mechnikov

"Study of the Fractional Composition of *Cl. oedematiens* Toxins and Toxoids.
Report I. Fractionation of Toxins and Toxoids by Gel Filtration"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 47, No 6,
Jun 70, pp 112-115

Abstract: *Cl. oedematiens* toxin has a mosaic structure. It contains lethal necrotic factors and hemolysin. The fractional composition of a toxin nutrient medium on Sefadex G-100 gel, including crude and purified *Cl. oedematiens* toxoids, type A, was studied. The toxins were separated into three fractions, differing from one another in their biological and enzymatic activity. The first fraction contained the lethal dermonecrotic and antitoxin-binding activity; the second fraction contained the lecithinase and hemolytic activity; and the third fraction contained amylase. Two peaks were observed in the fraction of crude toxoid and toxin. All of the antitoxin-binding activity of the toxoids was contained in the high-molecular-weight proteins eluted in the first peak. The significance of the different components in *Cl. oedematiens* immunity requires further study.

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YANISHEVSKAYA, M.N.
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY FILTRATION ON GEL SEFADEX G-100 CL. OEDEMATIENS TOXINS TYPE A WERE DIVIDED INTO THREE FRACTIONS DIFFERENTIATED BY TOXICITY AND FERMENTING ACTIVITY. THE FIRST FRACTION INCLUDED THE LETAHL DERMONECROTIC AND ANTITOXIN BINDING ACTIVITY, THE SECOND LECITHINASE AND HEMOLYTIC ACTIVITY, AND THE THIRD AMYLASE. GEL FILTRATION OF OEDEMATIENS TOXOIDS PROVED TO INCREASE THEIR SPECIFIC ACTIVITY. FACILITY: MOSKOVSKIY INSTITUT VAKTSIN I SYVOROTOK IM MECHNIKOVA.

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